May 28, 1929. J. F. PERKINS 1,714,888

WASHING MACHINE

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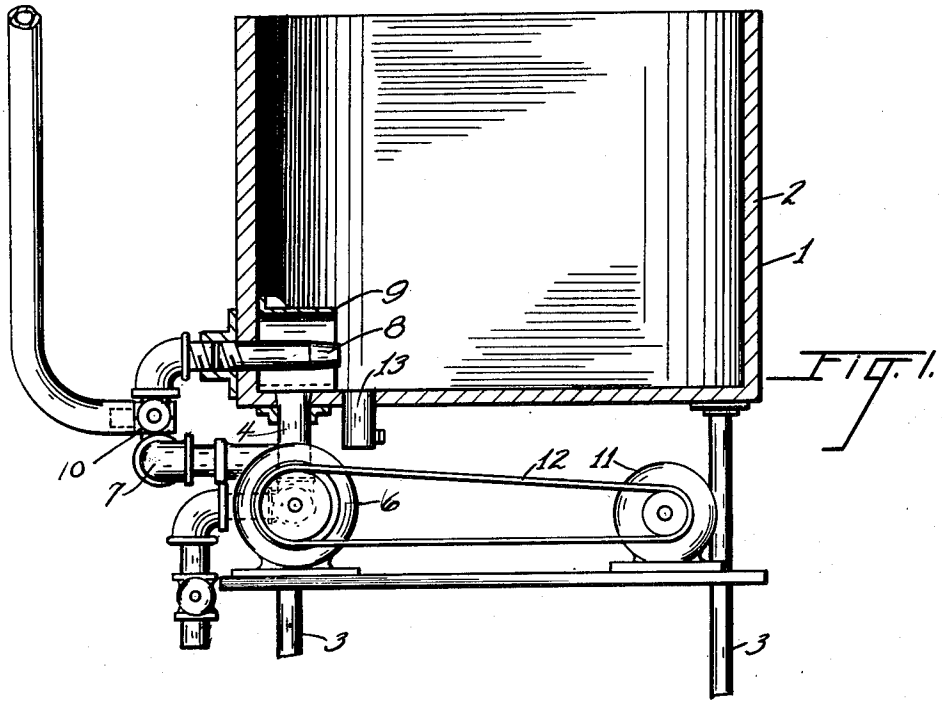


Fig. 1.

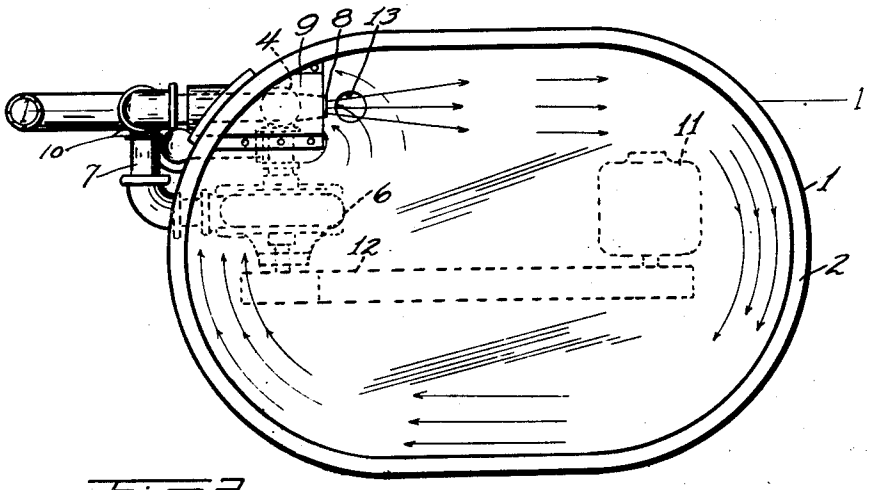


Fig. 2.

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Fig. 3.

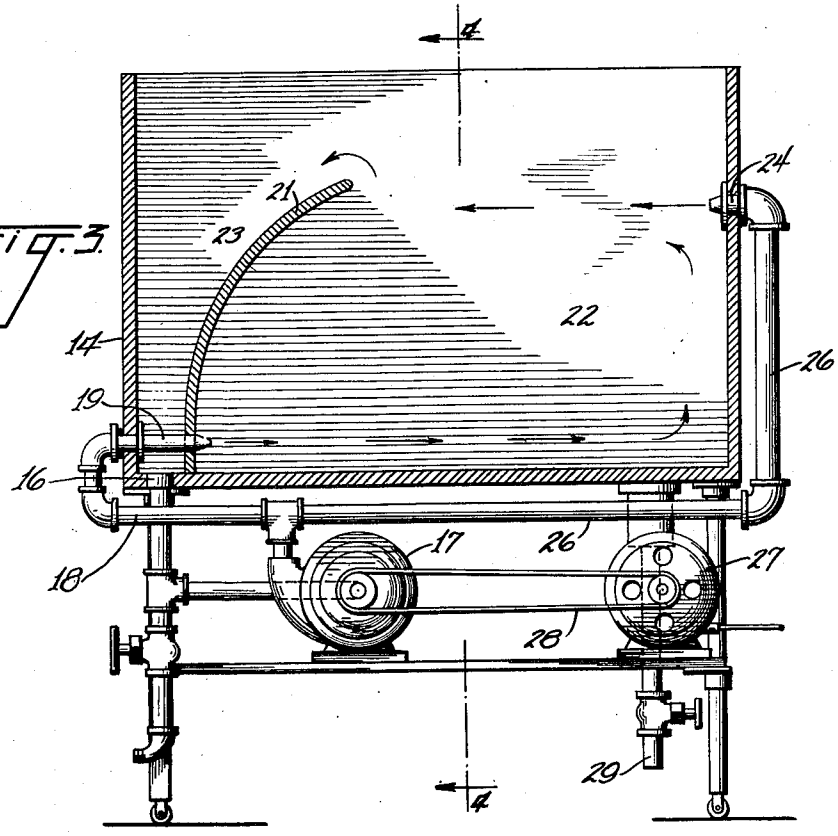
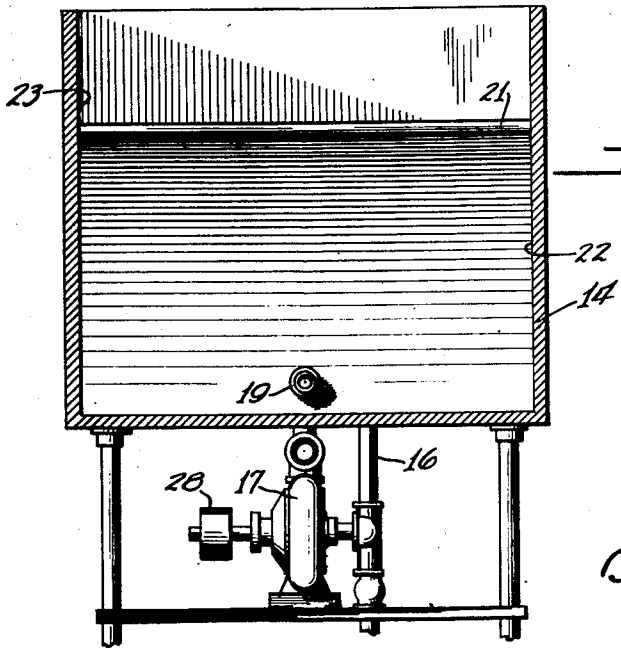


Fig. 4.



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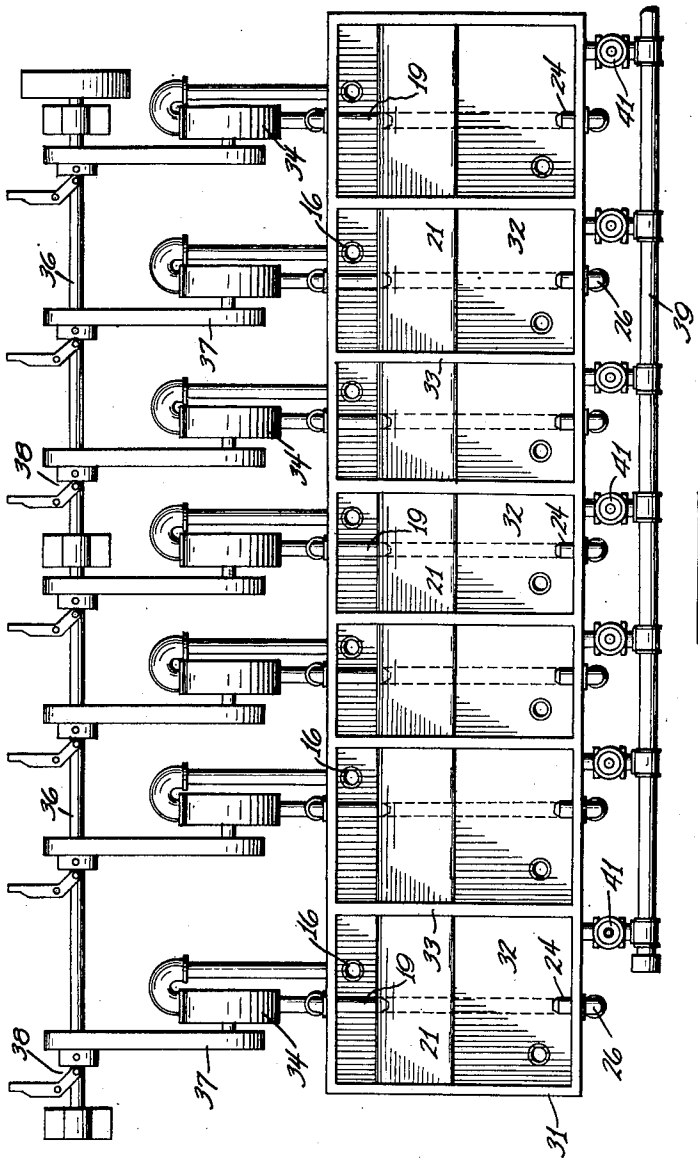


Fig. 5.

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UNITED STATES PATENT OFFICE.

JAMES F. PERKINS, OF HAYWARD, CALIFORNIA.

WASHING MACHINE.

Application filed November 19, 1925. Serial No. 69,994.

The present invention relates to improvements in washing machines, and has for its particular object to provide a washing machine in which agitation of the clothes is brought about by circulating the water in the tub.

It is particularly proposed to provide improved circulating means and to arrange the same in such a manner that the clothes are prevented from approaching the water outlet and are diverted from the latter back into the circulating system. To accomplish this object the water is withdrawn by the circulating system from the bottom of the tub and returned under pressure through a nozzle arranged above the point of withdrawal while a guard diverts the clothes from the point of withdrawal to the front of the nozzle.

Further objects and advantages of my invention will appear as the specification proceeds.

The preferred forms of my invention are illustrated in the accompanying drawings, in which:

Figure 1 shows a vertical section through one form of my washing machine taken along the line 1—1 of Fig. 2.

Figure 2 a plan view of the machine.

Figure 3 a vertical section through a modified form of washing machine.

Figure 4 is a transverse section taken along line 4—4 of Figure 3, and:

Figure 5 a plan view showing a plurality of my washing machine arranged in one unit.

While I have shown only the preferred form of the invention, it should be understood that various changes or modifications may be made within the scope of the claim hereto attached without departing from the spirit of the invention.

What I consider the best form of my invention is illustrated in Figures 1 and 2. The washing machine 1 comprises a tub 2 which is preferably oval shaped as shown in Figure 2 and may be provided with a plurality of legs 3 for supporting the same. My water circulating system comprises an outlet conduit 4 which is preferably arranged in the bottom of the tub and near the edge thereof so as to extend downward, a pump 6 of any suitable form and a discharge pipe 7 for the pump terminating in a nozzle 8 which latter extends into the tub so as to discharge thereinto tangentially, the nozzle being disposed immediately above the point of withdrawal 4. The nozzle has a reduced opening so that water is discharged therefrom under high pressure. A hood or guard 9 is arranged to surround the nozzle and to prevent circulating clothes from entering the outlet 4. A motor 11 of any suitable form is made to drive the pump 6 by means of a belt 12.

The manner in which my system works is well illustrated in Figure 2 from which it appears that the water discharged from the nozzle 8 under high pressure revolves in the tub, carrying the clothes along with it. It should be understood however, that the clothes will travel more slowly than the water, so that water passing through the clothes may carry off dirt or impurities to be washed out. As the clothes in their travel approach the outlet 4 they are prevented from being sucked into the outlet by the guard 9 which diverts and guides them in front of the nozzle 8 where they are again subjected to the stream of water discharged from the nozzle. It will be seen that thus a continuous revolving motion of the clothes takes place while the clothes are never apt to clog the water outlet because they are constantly driven away from the same. A suitable hopper 13 may be provided in the bottom of the tube in front of the nozzle to receive particles of dirt and the like sufficiently heavy to work toward the bottom.

The form shown in Figures 3 and 4 substantially resembles that shown in Figures 1 and 2 and comprises the tube 14, the outlet 16, the pump 17, the discharge 18 and the nozzle 19 arranged above the outlet 16 in the same manner as shown in Figure 1. The guard 21 is shaped somewhat different from that shown in Figure 1 and in this particular instance consists of a baffle plate separating the tub into 2 compartments 22 and 23, the former being the compartment for the clothes and the latter an overflow compartment. The theory of this machine is substantially the same as that of the machine shown in Figure 1, but the water is made to revolve in a vertical plane instead of in a horizontal plane, the nozzle 19 pointing toward the center instead of being tangential. The top of the baffle is curved into the chamber 22 and allows a certain amount of the water pumped into the chamber 22 to overflow and to be withdrawn by the pump through the outlet 16 while the clothes revolving in the chamber 22 are diverted downwardly until they

again reach the front of the nozzle which pushes the clothes diametrically across the compartment. In this construction, I preferably cause a second impetus to be given to the revolving clothes by a second nozzle 24 disposed opposite the top of the baffle and connecting with the discharge of the pump through a pipe 26. The pump may be driven by a motor 27 through the belt 28, and a drain is provided for the tub at 29.

In Figure 5 is shown a battery of washing machines combined into one unit. For this purpose the washing machine illustrated in Figures 3 and 4 have been selected, although it should be understood that the washing machine shown in Figures 1 and 2 would serve for the same purpose. A large tank 31 divided into a plurality of compartments 32 by means of partitions 33, the compartments being preferably made of different sizes so as to be particularly adapted for different kinds of clothes.

The baffle 21, the discharge nozzles 19, and the outlets 16 will be easily discovered. The pumps 34 are arranged somewhat differently so as to be aligned with one another and are driven from the common shaft 36 by means of belts 37, each drive including a clutch mechanism allowing the pumps to be connected as individual units. A fresh water supply pipe 39 may be arranged along-side of the tank 31 and have valved connections 41 with each of the compartments.

A three-way valve 10 is preferably introduced into the discharge side of the pump which allows the water to be directed either through the nozzle 8 or to the outside. If set in the latter position, the pumping system may be used for draining the tub completely even when the sink into which its contents are discharged is higher than the tub.

I claim—

In a washing machine of the character described, a wash tub adapted to hold water and clothes therein, a circulating system outside the tub, a nozzle discharging the water under pressure from said system in a plane parallel to a side of said tub, a drain conduit disposed immediately below and substantially at right angles to said nozzle, and a guard extending over the nozzle for diverting the clothes from the drain conduit and directing the same into the path of the high pressure discharge.

In testimony whereof I affix my signature.

JAMES F. PERKINS.